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APPLICATION NO.	FILING DATE	FIRST-NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,926	08/08/2001	Amir Said	10018297-1	3679

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EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
	2128

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

	Application No.	Applicant(s)
	09/924,926	SAID, AMIR
	Examiner	Art Unit
	Fred Ferris	2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 April 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3, 6-15 and 18-23 is/are rejected.
- 7) Claim(s) 4, 5, 16 and 17 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 August 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. *Claims 1-23 have been presented for examination based on applicant's amendment filed 25 April 2005. Claims 1-3, 6-15, and 18-23 now stand rejected based on new grounds for rejection. Claims 4-5 and 16-17 remain objected to.*

Response to Arguments

2. *Applicant's arguments filed 25 April 2005 have been fully considered.*

The examiner now withdraws the 112(1) rejection and the objection to the specification in view of applicant's amendment to the specification and arguments filed 2 April 2005. However, applicant's arguments with respect to the prior art rejection of claims 1-3, 5-15, and 18-23 have been considered but are moot in view of the new ground(s) of rejection. Please see new art rejections below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1-3, 6-15, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,011,595 issued to Henderson et al in view of U.S. Patent 5,079,630 issued to Golin et al.**

Independent claims 1, 13, and 23 are drawn to a method, apparatus, and processor code for identifying predominate color in a digital image by:

- applying a detection rule to randomly-selected pixels in the image
- testing specific colors to reduce probability of false-positive and false-negative outcome*

** (The limitation of “testing of specific colors” as been interpreted by the examiner as simply identifying predominate colors of randomly selected pixels from a color occurrence list. The recitation of “to reduce the probability of at least one false-positive outcome and a false-negative outcome” has not been given patentable weight since it merely recites an intended result.)*

Per independent claims 1, 13, and 23: Henderson teaches a method and apparatus for identifying (detecting) key colors (predominate) within a digital image (CL2-L12-35, Fig. 9) inclusive of testing for the occurrence of key colors (predominate) from a color occurrence list (CL8-L34-61, CL9-L10, Figs. 3, 6) in the interest of decreasing (reducing) the probability of key color (predominate) false detection (CL4-L52, CL6-L61, CL7-L19, CL2-L41-51) Henderson further discloses a process (i.e. a “rule” or “algorithm”) for characterizing the distribution of key (predominate) color values

(CL9-L13-20, CL7-L13-29, Figs. 3, 6). The examiner has interpreted Henderson's process for characterization of the distribution of key color values to be functionally equivalent to a "detection rule".

Henderson does not explicitly disclose that the pixels are randomly-selected.

Golin teaches color image compression using techniques that include randomly selecting pixels (CL27-L37-41, Fig. 42).

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Henderson relating to identifying key colors (predominate) within a digital image, with the teachings of Golin relating to randomly selecting pixels, to realize the elements of the claimed invention. An obvious motivation exists since, in this case, the Henderson reference teaches to the Golin reference, and the Golin reference teaches to the Henderson reference. Specifically, both Henderson and Golin teach and color image compression and the detection of digital image colors and are used in the same technological arena as noted above. Henderson teaches to Golin because Henderson teaches detecting key colors within a digital image as does Golin (See: Henderson/Golin, Abstract/Summary of Invention). Golin teaches to Henderson because Golin specifically teaches randomly selecting the pixels prior to compression. (See: Golin CL27-L40, Fig. 42) Further, the level of skill required by an artisan to realize the claimed limitations of the present invention is clearly established by both references. (See: Henderson/Golin, Background/Abstract) Accordingly, a skilled artisan tasked with realizing a method and apparatus for identifying the predominate (key) colors in a digital image, and having access to the

teachings of Henderson and Golin, would have knowingly modified the teachings of Henderson with the teachings of Golin (or visa versa) to realize the claimed elements of the present invention while gaining the advantages of reduced cost and development time. It is further noted that Golin provides additional motivation at column 27, line 38 by reciting that "the strategy of picking pixels at random has proven to be effective", and hence, would again have knowingly been incorporated by a skilled artisan.

Per dependent claims 2 and 14: Henderson discloses the detection/generation of a strip of selected pixels (i.e. an occurrence list of selected pixels) in a color digital image and a functionally equivalent to a "detection rule" process as noted above. (CL8-L34-61)

Per dependent claims 3 and 15: Henderson teaches decreasing (reducing) the probability of key color (predominate) false (positive/negative) detection as also previously cited above. (CL4-L52, CL6-L61, CL7-L19, CL2-L41-51)

Per dependent claims 6-10 and 18-22: These claims merely require creating a color list by sampling the image pixel colors and adding the color to the list and subsequently incrementing the list counter. These limitations are rendered obvious by the color occurrence list (CL8-L34-61, CL9-L10, Figs. 3, 6) taught by Henderson as previously noted above. Further, the use of "lists" and "counters" is very well known in the art and would have knowingly been incorporated by a skilled artisan, using the reasoning previously cited above, as a method of maintaining a data structure of color image pixels. (See definition: "list" – a multi-element data structure allowing elements to

*be added and removed in any order, "counter" - used to keep count of elements,
Microsoft Computer Dictionary, 1997)*

Per dependent claims 11-12: These claims merely recite the use of a sorted list and hash table in maintaining the color occurrence list. Henderson teaches the use of tables (CL3-L17-21) and occurrence list (CL8-L34-61) that would necessarily be sorted (i.e. indexed) as previously noted above. Further, sorted lists and hash tables are also very well known in the art and would have knowingly been incorporated by a skilled artisan, using the reasoning previously cited above, as a method of maintaining a data structure list of color image pixels. (See definition: "sort" – to organize data in a particular order, "hash table" – mapping numerical values into values corresponding data in a structure such as a table, Microsoft Computer Dictionary, 1997)

Allowable Subject Matter

4. *Claims 4-5 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims..*

In particular, the prior art does not disclose the specific arrangement of elements of a method and apparatus relating to the probability of identifying a color having $r_c < r_a$ / $r_c > r_a$ as a predominant color, where r_c is number of pixels in a sample region having a specific color divided by the total number of pixels in the sample region, and r_a/r_d is an acceptable/desirable ratio as recited in dependent claims 4-5 and 16-17.

Conclusion

5. *Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).*

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Careful consideration should be given prior to applicant's response to this Office Action.

"Image Compression Using the Spatial-Orientation Tree", A. Said et al, IEEE 0-7803-1254-6/93, IEEE 1993 teaches lossy color image compression.

"An Image Multiresolution representation for Lossless and Lossy Compression", A. Said et al, IEEE Transactions on Image Processing, Vol. 5, No. 9, September 1996 teaches lossy color image compression.

Art Unit: 2128

"A Genetic Approach to Color Image Compression", H. Feiel, ACM 0-89791-850-9, ACM 1997 teaches lossy color image compression.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached at 571-272-3780. The Official Fax Number is: (703) 872-9306

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July 6, 2005*


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